		Committed Backlog Items	Tasks	Who?	Not Started	In Progress	Completed
PBI #1		PBI #1 - Generate error messages	PBI time: 8hr	Alex		Х	
	an election official using the voting system software	0.5hr	Catch error conditions	Alex			X
I want		0.5hr	Generate useful error messages	Alex			X
	I can fix the file and provide the correctly formatted file	0.5hr	Cleanly resolve error	Alex			Y
30 that	rearrix the file and provide the correcting formatted file	4hr	Fuzz via AFL++	Alex			Y
Accontanco Critoria	Generate appropriate errors for empty ballot files, files with parse problems	0.5hr	Documentation	Alex			^ v
	Generate an error if unable to parse input CSV file; accept correctly formatted CSV	0.5111	Documentation	Alex			^
	files; No compilation error; unit tests for each method and agreed amount of						
Definition of Done	system tests pass; correct output	1hr	Write new unit tests	Alex			X
	Medium (~5-6 hours)	0.1hr	Run new unit tests	Alex			X
		0.5hr	Write new system tests	Alex			X
		0.1hr	Run new system tests	Alex			X
		0.15hr	Write unit test logs	Alex	X		
		0.15hr	Write system test logs	Alex	X		
PBI #2		PBI #2 - Resolve ties via coin flip	PBI time: 3.5hr	Alex, Janani		Y	
	an election official using the voting system software	the	Add new functionalitu	Janani		X	V
		0.5hr	Documentation				^
	Candidates or parties with ties to be resolved via a 50/50 coin flip	U.Shr		Janani			X
So that	Ties ae resolved randomly, fairly, and indepdently of other factors	Ihr	Write new unit tests	Alex	X		
		0.1hr	Run new unit tests	Alex	X		
	Ties between candidates or between parties can be resolved randomly	0.5hr	Write new system tests	Alex	X		
	Ties between candidates or between parties can be resolved randomly; No						
Definition of Done	compilation error; unit tests for each method and agreed amount of system tests pass; correct output	0.1hr	Run new system tests	Alex	Y		
		0.15hr	Write unit test logs	Janani	^ V		
LITOIT	Small (~2-3 hours)	0.15hr 0.15hr			×		
			Write system test logs	Janani	X		
PBI #3		PBI #3 - VotingSystem api has one method for elections		Alex			X
	a developer	0.1hr	Rewrite old calls in Election	Alex			X
	to be able to create and run an election, easily. The electables field is not	O.Sh.	December	Alexa			V
I want	populated unless three additional functions are celled in order	0.5hr	Documentation	Alex			X
So that	The probability of logic errors are reduced and the system is easily extensible.	1hr	Write new unit tests	Alex			X
		0.1hr	Run new unit tests	Alex			X
	A new method is added to votingSystem to automatically call processElectables(),						
	countVotes(), and calculateResults().	0.5hr	Write new system tests	Alex			X
Definition of Done	No compilation error; unit tests for each method and agreed amount of system tests pass; correct output	0.1hr	Run new system tests	Alex			V
		0.15hr		Alex			X
Effort	Small (~2-3 hours)		Write unit test logs				**
		0.15hr	Write system test logs	Alex			X
PBI #4		PBI #4 - Multiple files for the CPL algorithm	PBI time: 3.5hr	Ashwin, Alex, Leo		X	
	an election official	0.25hr	Change CLI functionality to take in multiple files for CPL	Alex			X
I want	Multiple files to be brought in for a CPL election	0.25hr		Alex			X
So that	they can bring in different files from different balloting locations	1hr	Code functionality for multiple files read	Leo			X
			Write new unit tests for new methods for CPL multiple file				
		0.5hr	functionality	Ashwin	X		
Acceptance Criteria	Multiple .csv input files for CPL election being read correctly at the same time	0.1hr	Run new unit tests for new methods written	Ashwin	X		
	No compilation error; unit tests for each method and agreed amount of system						
Definition of Done	tests pass; correct output	0.5hr	Write integration tests for CPL multiple files	Leo			X
			Run Integration tests to make sure system still functions				
Effort	Small (~2-3 hours)	0.1hr	correctly	Leo			X
		0.3hr	Write test logs for unit and integration tests	Leo			X
		0.5hr	Write Doxygen documentation for new methods written	Ashwin	X		
PBI #5							
1 51 #3		PBI #5 - Multiple files for the OPL algorithm	PBI time: 3.5hr	Ashwin, Leo		X	
	an election official	0.25hr	Change CLI functionality to take in multiple files for OPL	Ashwin, Leo Ashwin		X	X
As	an election official Multiple files to be brought in for an OPL election		Change CLI functionality to take in multiple files for OPL			X	X X
As		0.25hr	Change CLI functionality to take in multiple files for OPL	Ashwin		X	x x x
As I want	Multiple files to be brought in for an OPL election	0.25hr 0.25hr 1hr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Code functionality for multiple files read Write new unit tests for new methods for OPL multiple file	Ashwin Ashwin Leo		X	x x x
As I want	Multiple files to be brought in for an OPL election	0.25hr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Code functionality for multiple files read	Ashwin Ashwin Leo		X	x x x
As I want So that	Multiple files to be brought in for an OPL election	0.25hr 0.25hr 1hr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Code functionality for multiple files read Write new unit tests for new methods for OPL multiple file	Ashwin Ashwin Leo		X	x x x x
As I want So that Acceptance Criteria	Multiple files to be brought in for an OPL election they can bring in different files from different balloting locations Multiple .csv input files for OPL election being read correctly at the same time No compilation error, unit tests for each method and agreed amount of system	0.25hr 0.25hr 1hr 0.5hr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Code functionality for multiple files read Write new unit tests for new methods for OPL multiple file functionality Run new unit tests for new methods written	Ashwin Ashwin Leo Leo		X	x x x x
As I want So that Acceptance Criteria	Multiple files to be brought in for an OPL election they can bring in different files from different balloting locations Multiple .csv input files for OPL election being read correctly at the same time	0.25hr 0.25hr Ihr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Code functionality for multiple files read Write new unit tests for new methods for OPL multiple file functionality Run new unit tests for new methods written Write integration tests for OPL multiple files	Ashwin Ashwin Leo		X	x x x x x
As I want So that Acceptance Criteria Definition of Done	Multiple files to be brought in for an OPL election they can bring in different files from different balloting locations Multiple .csv input files for OPL election being read correctly at the same time No compilation error, unit tests for each method and agreed amount of system tests pass; correct output	0.25hr 0.25hr 1hr 0.5hr 0.1hr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Code functionality for multiple files read Write new unit tests for new methods for OPL multiple file functionality Run new unit tests for new methods written Write integration tests for OPL multiple files Run Integration tests for OPL multiple files Run Integration tests to make sure system still functions	Ashwin Ashwin Leo Leo Leo		X	x x x x
As I want So that Acceptance Criteria Definition of Done	Multiple files to be brought in for an OPL election they can bring in different files from different balloting locations Multiple .csv input files for OPL election being read correctly at the same time No compilation error, unit tests for each method and agreed amount of system	0.25hr 0.25hr 1hr 0.5hr 0.1hr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Code functionality for multiple files read Write new unit tests for new methods for OPL multiple file functionality Run new unit tests for new methods written Write integration tests for OPL multiple files Run Integration tests to make sure system still functions correctly	Ashwin Ashwin Leo Leo Leo Leo		X	x x x x x x x x x x x x x x x x x x x
As I want So that Acceptance Criteria Definition of Done	Multiple files to be brought in for an OPL election they can bring in different files from different balloting locations Multiple .csv input files for OPL election being read correctly at the same time No compilation error, unit tests for each method and agreed amount of system tests pass; correct output	0.25hr 0.25hr 1hr 0.5hr 0.1hr 0.5hr 0.1hr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Code functionality for multiple files read Write new unit tests for new methods for OPL multiple file functionality Run new unit tests for new methods written Write integration tests for OPL multiple files Run Integration tests to make sure system still functions correctly Write test logs for unit and integration tests	Ashwin Ashwin Leo Leo Leo Leo Leo Ashwin	x	X	x x x x x x
As I want So that Acceptance Criteria Definition of Done Effort	Multiple files to be brought in for an OPL election they can bring in different files from different balloting locations Multiple .csv input files for OPL election being read correctly at the same time No compilation error, unit tests for each method and agreed amount of system tests pass; correct output	0.25hr 0.25hr 1hr 0.5hr 0.1hr 0.5hr 0.5hr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Code functionality for multiple files read Write new unit tests for new methods for OPL multiple file functionality Run new unit tests for new methods written Write integration tests for OPL multiple files Run Integration tests for OPL multiple files Run Integration tests to make sure system still functions correctly Write test logs for unit and integration tests Write Doxygen documentation for new methods written	Ashwin Leo Leo Leo Leo Leo Leo Leo Leo	X	X	x x x x x x x x x x x x x x x x x x x
As I want So that Acceptance Criteria Definition of Done	Multiple files to be brought in for an OPL election they can bring in different files from different balloting locations Multiple .csv input files for OPL election being read correctly at the same time No compilation error, unit tests for each method and agreed amount of system tests pass; correct output	0.25hr 0.25hr 1hr 0.5hr 0.1hr 0.5hr 0.5hr 0.5hr 0.75hr 0.75hr 0.75hr 0.75hr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Code functionality for multiple files read Write new unit tests for new methods for OPL multiple file functionality Run new unit tests for new methods written Write integration tests for OPL multiple files Run Integration tests for OPL multiple files Run Integration tests to make sure system still functions correctly Write test logs for unit and integration tests Write Doxygen documentation for new methods written PBI time: 3hr	Ashwin Ashwin Leo Leo Leo Leo Leo Ashwin	x	X	x x x x x x x x x x x x x x x x x x x
As I want So that Acceptance Criteria Definition of Done Effort PBI #6	Multiple files to be brought in for an OPL election they can bring in different files from different balloting locations Multiple .csv input files for OPL election being read correctly at the same time No compilation error, unit tests for each method and agreed amount of system tests pass; correct output	0.25hr 0.25hr 1hr 0.5hr 0.1hr 0.5hr 0.5hr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Code functionality for multiple files read Write new unit tests for new methods for OPL multiple file functionality Run new unit tests for new methods written Write integration tests for OPL multiple files Run Integration tests to make sure system still functions correctly Write test logs for unit and integration tests Write Doxygen documentation for new methods written PBI time: 3hr MPO can read MPO file	Ashwin Leo Leo Leo Leo Leo Leo Leo Leo	х	X	x
As I want So that Acceptance Criteria Definition of Done Effort PBI #6 As	Multiple files to be brought in for an OPL election they can bring in different files from different balloting locations Multiple .csv input files for OPL election being read correctly at the same time No compilation error; unit tests for each method and agreed amount of system tests pass; correct output Small (-2-3 hours) an election official	0.25hr 0.25hr 1hr 0.5hr 0.1hr 0.5hr 0.1hr 0.5hr PB #6 - MPO files in general 0.5hr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Code functionality for multiple files read Write new unit tests for new methods for OPL multiple file functionality Run new unit tests for new methods written Write integration tests for OPL multiple files Run Integration tests for OPL multiple files Run Integration tests to make sure system still functions correctly Write test logs for unit and integration tests Write Doxygen documentation for new methods written PBI time: 3hr MPO cor read MPO file MPO correctly inherits from VotingSystem and	Ashwin Leo Leo Leo Leo Leo Janani, Leo Janani	X	X	
As I want So that Acceptance Criteria Definition of Done Effort PBI #6 As I want	Multiple files to be brought in for an OPL election they can bring in different files from different balloting locations Multiple .csv input files for OPL election being read correctly at the same time No compilation error, unit tests for each method and agreed amount of system tests pass; correct output Small (-2-3 hours) an election official MPO election ballots to be brought in via a .csv file	0.25hr 0.25hr 1hr 0.5hr 0.1hr 0.5hr 0.1hr 0.5hr Piller - MPO files in general 0.5hr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Code functionality for multiple files read Write new unit tests for new methods for OPL multiple file functionality Run new unit tests for new methods written Write integration tests for OPL multiple files Run integration tests for OPL multiple files Run integration tests to make sure system still functions correctly Write test logs for unit and integration tests Write Doxygen documentation for new methods written PBI time: 3hr MPO can read MPO file MPO correctly inherits from VotingSystem and implements all required methods	Ashwin Leo Leo Leo Leo Leo Janani, Leo Janani	X	X	
As I want So that Acceptance Criteria Definition of Done Effort PBI #6 As	Multiple files to be brought in for an OPL election they can bring in different files from different balloting locations Multiple .csv input files for OPL election being read correctly at the same time No compilation error; unit tests for each method and agreed amount of system tests pass; correct output Small (-2-3 hours) an election official	0.25hr 0.25hr 1hr 0.5hr 0.1hr 0.5hr 0.1hr 0.5hr 0.1hr 0.5hr 0.1hr 0.5hr 0.5hr 0.5hr PBI #6 - MPO files in general 0.5hr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Change GUI functionality for multiple files read Write new unit tests for new methods for OPL multiple file functionality Run new unit tests for new methods written Write integration tests for OPL multiple files Run integration tests for OPL multiple files Run integration tests to make sure system still functions correctly Write test logs for unit and integration tests Write Doxygen documentation for new methods written PBI time: Shr MPO can read MPO file MPO correctly inherits from VotingSystem and implements all required methods Write unit tests for added functionality	Ashwin Ashwin Leo Leo Leo Leo Ashwin Leo Janani, Leo Janani Janani	x	X	x x x
As I want So that Acceptance Criteria Definition of Done Effort PBI #6 As I want	Multiple files to be brought in for an OPL election they can bring in different files from different balloting locations Multiple .csv input files for OPL election being read correctly at the same time No compilation error, unit tests for each method and agreed amount of system tests pass; correct output Small (-2-3 hours) an election official MPO election ballots to be brought in via a .csv file	0.25hr 0.25hr 1hr 0.5hr 0.1hr 0.5hr 0.1hr 0.5hr Piller - MPO files in general 0.5hr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Code functionality for multiple files read Write new unit tests for new methods for OPL multiple file functionality Run new unit tests for new methods written Write integration tests for OPL multiple files Run integration tests for OPL multiple files Run integration tests to make sure system still functions correctly Write test logs for unit and integration tests Write Doxygen documentation for new methods written PBI time: 3hr MPO can read MPO file MPO correctly inherits from VotingSystem and implements all required methods	Ashwin Leo Leo Leo Leo Leo Janani, Leo Janani	X	X	
As I want So that Acceptance Criteria Definition of Done Effort PBI #6 As I want So that	Multiple files to be brought in for an OPL election they can bring in different files from different balloting locations Multiple .csv input files for OPL election being read correctly at the same time No compilation error, unit tests for each method and agreed amount of system tests pass; correct output Small (-2-3 hours) an election official MPO election ballots to be brought in via a .csv file	0.25hr 0.25hr 1hr 0.5hr 0.1hr 0.5hr 0.1hr 0.5hr 0.1hr 0.5hr 0.1hr 0.5hr 0.5hr 0.5hr PBI #6 - MPO files in general 0.5hr	Change CLI functionality to take in multiple files for OPL Change GUI functionality to take in multiple files for OPL Change GUI functionality for multiple files read Write new unit tests for new methods for OPL multiple file functionality Run new unit tests for new methods written Write integration tests for OPL multiple files Run integration tests for OPL multiple files Run integration tests to make sure system still functions correctly Write test logs for unit and integration tests Write Doxygen documentation for new methods written PBI time: Shr MPO can read MPO file MPO correctly inherits from VotingSystem and implements all required methods Write unit tests for added functionality	Ashwin Ashwin Leo Leo Leo Leo Ashwin Leo Janani, Leo Janani Janani	X	X	x x x

Definition of Done	No compilation error; unit tests for each method and agreed amount of system tests pass; correct output	0.1hr	Run integration tests	Leo			×
Effort	Small (~2-3 hours)	0.15hr	Write unit test logs	Janani		X	
Ziioit	G. Hall (2 3 110013)	0.15hr	Write system test logs	Janani		X	
		0.5hr		Janani		X	
PBI #7		PBI #7 - MPO multiple files	PBI time: 2.7hr	Alex, Ashwin, Leo		Y	
As	an election official	0.1hr	Change CLI functionality to take in multiple files for MPO			^	V
I want	Multiple files to be brought in for a MPO election	0.1hr	Change GUI functionality to take in multiple files for MPO				^ V
So that	they can bring in different files from different balloting locations	0.5hr	Code functionality for multiple files read	Leo			×
30 trial	they can bring in amerent lifes from afficient ballotting locations	0.511	Write new unit tests for new methods for MPO multiple	Leo			^
		0.5hr	file functionalitu	Ashwin			X
Acceptance Criteria	Multiple .csv input files for MPO election being read correctly at the same time	0.1hr	Run new unit tests for new methods written	Ashwin	X		
,	No compilation error; unit tests for each method and agreed amount of system						
Definition of Done	tests pass; correct output	0.5hr	Write integration tests for MPO multiple files	Ashwin			X
			Run Integration tests to make sure system still functions				
Effort	Small (~2-3 hours)	0.1hr	correctly	Ashwin	X		
		0.3hr	Write test logs for unit and integration tests	Leo		X	
		0.5hr	Write Doxygen documentation for new methods written	Leo		X	
PBI #8		PBI #8 - MPO election	PBI time: 4.5hr	Alex, Leo, Ashwin		X	
As	an election official	1hr	Break RawData::ParseFile() into sub functions	Alex			X
	to write an algorithm that determines multiple winners based on the candidates	0.51					L.
I want	receiving the most ballots with a fair coin toss	0.5hr	Change header line read order based on election type	Alex			X
So that	an MPO election can be run by the voting system	inr osta	Add new functionality	Leo, Janani			X
		0.5hr	Write unit tests for added functionality	Leo			X
Acceptance Criteria	MPO algorithm correctly calculates the winners and losers and fairly determines ties if there are any	0.1hr	Run unit tests	Leo			×
Ассеринсе співпа	No compilation error; unit tests for each method and agreed amount of system	O.III	Write integration tests to make sure the system still	200			^
Definition of Done	tests pass; correct and fair output	0.5hr	works as intended	Leo			X
Effort	Large (~6-7 hours)	0.1hr	Run integration tests	Leo			X
		0.15hr	Write unit test logs	Ashwin		X	
		0.15hr	Write system test logs	Ashwin		X	
		0.5hr	Write Doxygen documentation for new methods written	Ashwin		X	
PBI #9		PBI #9 - MV files in general	PBI time: 3hr	Ashwin, Janani			
Δs	an election official	0.5hr	RawData can read MV file	Ashwin		×	
I want	MV election ballots to be brought in via a .csv file	0.5hr	Fileops can read MV file	Ashwin		X	
So that	the election can be run by the MV algorithm in the system	0.5hr	Write unit tests for added functionality	Ashwin		X	
oo mar	the dicetor can be for by the fire digorithm in the system	0.1hr	Run unit tests	Ashwin		X	
			Write integration tests to make sure the system still				
Acceptance Criteria	.csv input file for MV election being read correctly	0.5hr	works as intended	Janani		X	
	No compilation error; unit tests for each method and agreed amount of system						
	tests pass; correct output	0.1hr	Run integration tests	Janani		X	
Effort	Small (~2-3 hours)	0.15hr	Write unit test logs	Janani		X	
		0.15hr	Write system test logs	Janani		X	
		0.5hr	33	Ashwin		X	
PBI #10		PBI #10 - MV multiple files	PBI time: 2.7hr	Alex, Leo		X	
As	an election official	0.1hr	Change CLI functionality to take in multiple files for MV	Alex			X
I want	Multiple files to be brought in for an MV election	0.1hr	Change GUI functionality to take in multiple files for MV	Alex			X
So that	Different files can be brought in from different balloting locations	0.5hr	Code functionality for multiple files read	Leo			X
			Write new unit tests for new methods for MV multiple file				
		0.5hr	functionality	Leo			X
Acceptance Criteria	Multiple .csv input files for MV election being read correctly at the same time	0.1hr	Run new unit tests for new methods written	Leo			X
Definition of Done	No compilation error; unit tests for each method and agreed amount of system tests pass; correct output	0.5hr	Write integration tests for MV multiple files	Leo			Y
Denimon of Done	teata puas, confect output	U.Srii	Run Integration tests to make sure system still functions	200			^
Effort	Small (~2-3 hours)	0.1hr	correctly	Leo			X
		0.3hr	Write test logs for unit and integration tests	Leo			X
		0.5hr		Leo			X
PBI #11		PBI #11 - MV election	PBI time: 4.5hr	Alex, Janani, Ashwin		Х	
As	an election official	1hr	Break RawData::ParseFile() into sub functions	Alex			X
	to determine multiple winners based on the candidates receiving the most ballots						
I want	with a fair coin toss if there is a tie or ties between candidate	0.5hr	Change header line read order based on election type	Alex			X
	our voting system can handle and process votes case in an MV election using an						
So that	Municipality Voting (MV) algorithm	1hr	Add new functionality	Janani, Ashwin		X	
		0.5hr	Write unit tests for added functionality	Ashwin		X	
Acceptance Criteria	Program correctly produces multiple winners in MV format	0.1hr	Run unit tests	Ashwin	X		
Definition of Dec	Program section passes unit tests; no logic errors that produces incorrect winner	OFh	Write integration tests to make sure the system still		V		
	results; agreed amount of system tests pass	0.5hr	works as intended		X		
Effort	Large (~6-7 hours)	0.1hr 0.15hr	Run integration tests	Ashwin	A		
			Write unit test logs		X		
		0.15hr	Write system test logs	Ashwin	X		
		0.5hr		Ashwin	X		
PBI #12		PBI #12 - MPO Display	PBI time: 3hr	Alex,		X	
As	an election official	1hr	Add new functionality	Alex			X

l want	MPO election statistics to be displayed to the screen at the end of the election	0.5hr	Write unit tests for added functionality (Move from election)	Alex		V	
			election)	Alex		^	
	MPO election results and other relevant info can be read and understood easily by election officials	0.1hr	Run unit tests		x		
			Write integration tests to make sure the system still				
		0.5hr	works as intended		X		
	Clearly displays the winners and losers of the election, as well as the percentage of votes each candidate received.	0.1hr	Run integration tests		x		
	No compilation error; unit tests for each method and agreed amount of system tests pass; correct output/displays the correct information in an easily						
Definition of Done	understandable format	0.15hr	Write unit test logs		X		
Effort	Medium (~4-5 hours)	0.15hr	Write system test logs		X		
		0.5hr	Write Doxygen documentation for new methods written		X		
PBI #13		PBI #13 - MV Display	PBI time: 3hr	Alex,		X	
As	an election official	1hr	Add new functionality	Alex			X
l want	to display results from an MV election to the screen to see who won and who lost	0.5hr	Write unit tests for added functionality (Move from election)	Alex		×	
	election officials can easily view results and know the number of votes they received by all the voters	0.1hr	Run unit tests		x		
		0.5hr	Write integration tests to make sure the system still works as intended		×		
	Displays the winners and losers of the election, as well as the number of votes received by all of the voters	0.1hr	Run integration tests		×		
	No compilation error, unit tests for each method and agreed amount of system tests pass; correct output/displays the correct information in an easily						
	understandable format	0.15hr	Write unit test logs		X		
Effort	Medium (~4-5 hours)	0.15hr	Write system test logs		X		
			Write Doxygen documentation for new methods written				